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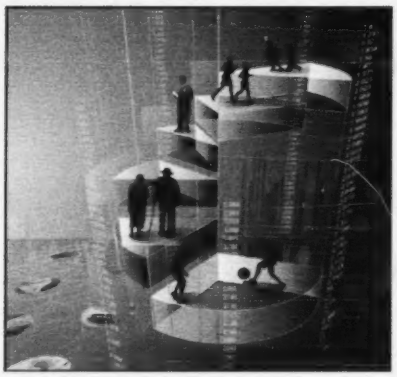
Threshold and subthreshold Generalized Anxiety Disorder (GAD) and suicide ideation



by Heather Gilmour

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^{r} revised
x suppressed to meet the confidentiality requirements of the *Statistics Act*
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* significantly different from reference category ($p < 0.05$)

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Threshold and subthreshold Generalized Anxiety Disorder (GAD) and suicide ideation

by Heather Gilmour

Abstract

Background: Subthreshold Generalized Anxiety Disorder (GAD) has been reported to be at least as prevalent as threshold GAD and of comparable clinical significance. It is not clear if GAD is uniquely associated with the risk of suicide, or if psychiatric comorbidity drives the association.

Data and methods: Data from the 2012 Canadian Community Health Survey–Mental Health were used to estimate the prevalence of threshold and subthreshold GAD in the household population aged 15 or older. As well, the relationship between GAD and suicide ideation was studied. Multivariate logistic regression was used in a sample of 24,785 people to identify significant associations, while adjusting for the confounding effects of sociodemographic factors and other mental disorders.

Results: In 2012, an estimated 722,000 Canadians aged 15 or older (2.6%) met the criteria for threshold GAD; an additional 2.3% (655,000) had subthreshold GAD. For people with threshold GAD, past 12-month suicide ideation was more prevalent among men than women (32.0% versus 21.2% respectively). In multivariate models that controlled sociodemographic factors, the odds of past 12-month suicide ideation among people with either past 12-month threshold or subthreshold GAD were significantly higher than the odds for those without GAD. When psychiatric comorbidity was also controlled, associations between threshold and subthreshold GAD and suicidal ideation were attenuated, but remained significant.

Interpretation: Threshold and subthreshold GAD affect similar percentages of the Canadian household population. This study adds to the literature that has identified an independent association between threshold GAD and suicide ideation, and demonstrates that this association is also apparent for subthreshold GAD.

Key words: Cross-sectional study, depression, health survey, mood disorders, suicidality, suicide behaviours

Generalized Anxiety Disorder (GAD) is characterized by excessive, often irrational, worry about events and situations such as work, school, health, relationships, finances or routine activities.[1] The anxiety persists for at least six months, is difficult to control, and interferes with occupational, social or other areas of functioning.[1] It is accompanied by symptoms such as restlessness, fatigue, muscle tension, irritability, sleep disturbance, and difficulty concentrating; trembling, sweating, headache, or gastrointestinal symptoms may also be present.[1] GAD has been associated with negative social and economic consequences[2] and lower health-related quality of life.[3] Estimates of the prevalence of past 12-month GAD in the population range from 1.1% to 3.0%.[4-10]

A formal diagnosis of GAD aims to distinguish it from normal stress reactions and from other anxiety or mood disorders. No standard definition of subthreshold GAD is available, but it is typically characterized by meeting some, but not all, of the diagnostic criteria required for threshold GAD[6-8,11-17]; for example, the number of anxiety symptoms required for a formal diagnosis is not met, significant impairment is not reported, or the worry has not persisted for at least six months.

Discussion is ongoing about whether subthreshold disorders are different constructs than threshold disorders, or whether they are simply less severe forms on a continuum,[18] and how categorical and dimensional approaches to disorder measurement may best be used.[19] Various studies have shown that subthreshold levels of GAD are as or more prevalent than the full disorder and are clinically relevant because they are associated with substantial impairment, comorbidity, and service use, and are predictive of subsequent psychopathology.[6-8,12,14,15,17,20,21]

Psychiatric problems have been related to suicidal behaviours,[22] but the evidence for GAD is mixed—some studies demonstrated an independent association,[23-26] while others did not.[27-30] Debate continues about whether the association reflects comorbidity with other mental disorders (notably, depression) and how to adjust for this in analytical studies.[26,31,32] Research on the relationship between subthreshold GAD and suicide behaviours has been limited.[12]

Using data from the 2012 Canadian Community Health Survey–Mental Health (CCHS–MH), this study estimated the prevalence of past 12-month threshold and subthreshold GAD in the household population aged 15 or older. Sociodemographic and psychiatric correlates of GAD were also examined. Multivariate analysis was conducted to determine if threshold GAD and subthreshold GAD were independently associated with suicide ideation when taking sociodemographic and comorbid psychiatric disorders into account.

Data source

The cross-sectional 2012 CCHS–MH provides national estimates of the prevalence and correlates of major mental disorders among the household population aged 15 or older in the 10 provinces. The survey excluded persons living on reserves or other Aboriginal settlements, full-time members of the Canadian Forces, and the institutionalized population. The response rate was 68.9%, yielding a sample of 25,113 that represented 28.3 million Canadians aged 15 or older.[33]

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Analytical sample

The analysis was based on a sample of 24,785 respondents among whom past 12-month GAD status could be categorized. The weighted mean age of the sample was 45.6 years, and 50.7% were female. At the time of the survey, 60.1% of respondents had a partner; 12.9% were separated/divorced/widowed; and 27.0% were never married. Most (82.4%) resided in urban centres, and 78.0% had completed postsecondary education.

Measures

The 2012 CCHS-MH used the World Health Organization version of the Composite International Diagnostic Interview 3.0 (WHO-CIDI),[34] a standardized instrument for the assessment of mental disorders and conditions according to DSM-IV (*Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*)[1] criteria. Six mental disorders (lifetime and past-year) were included in the 2012 CCHS–MH: depression; bipolar disorder; GAD; alcohol abuse and dependence; cannabis abuse and dependence; and substance abuse and dependence. Diagnostic algorithms identified respondents meeting the criteria for each disorder.

To determine past 12-month GAD, lifetime GAD must first be assessed. Respondents met the criteria for lifetime GAD if they reported:

- excessive anxiety and worry, and anxiety that lasted at least six months about at least one event or activity;
- difficulty controlling the worry;
- three or more symptoms associated with anxiety (restlessness or feeling keyed up or on edge, being easily fatigued, difficulty concentrating or mind going blank, irritability, muscle tension, sleep disturbance);
- at least one worry unrelated to an Axis 1 disorder; and
- clinically significant distress or significant impairment in social, occupational, or other important areas of functioning as a result of the anxiety, worry or physical symptoms.

The past 12-month *GAD status* of the sample was categorized into three groups:

1. *12-month threshold GAD*: a) met the criteria for lifetime GAD; b) reported an episode of generalized anxiety that lasted at least six months in the 12 months before the interview; and c) reported clinically significant distress or impairment in social, occupational or other important areas of functioning.
2. *12-month subthreshold GAD*: met any two of the three criteria for 12-month threshold GAD.
3. *No GAD*: did not meet the criteria for past 12-month threshold or subthreshold GAD.

Mood disorder (bipolar or depression) and *substance use disorder* (alcohol, cannabis, drug) were also assessed with the WHO-CIDI. They were classified as past 12-month; lifetime, but not past 12-month; and no disorder.

Schizophrenia, psychosis and *post-traumatic stress disorder (PTSD)* were assessed with separate self-report questions. Respondents were asked to report conditions that had been diagnosed by a health professional and were expected to last, or had already lasted, six months or more.

Suicide ideation, past 12 months. Respondents screened into the survey module for depression were asked if, during the period of two weeks or longer when their symptoms were most severe or frequent, they had seriously thought about committing suicide or taking their own life. Respondents not in the depression module were also asked if they had ever seriously thought about committing suicide or taking their own life. Those who replied "yes" to either question were asked if this had occurred in the past 12 months.

Four *age groups* were defined: 15 to 24; 25 to 44; 45 to 64; and 65 or older. Age was entered into logistic regression models as a continuous variable.

Highest level of household education was categorized as postsecondary completion or less than postsecondary completion.

Marital status was grouped into three categories: partner (married or common-law); divorced, separated or widowed; or never married.

Place of residence was categorized as rural or in a population centre. Population centres are continuously built-up areas with a population concentration of 1,000 or more and a population density of 400 or more per square kilometre.

Analytical techniques

Descriptive statistics were calculated to determine the percentage of Canadians aged 15 or older who met the criteria for threshold and subthreshold GAD overall and by sociodemographic and psychiatric characteristics, and the prevalence of suicide ideation by GAD status. Logistic regression analysis was used to identify independent associations between threshold and subthreshold GAD and suicide ideation while controlling for sociodemographic variables and psychiatric comorbidity. Separate analyses were conducted for men and women.

All analyses were performed using SAS 9.3. Survey sampling weights were applied so that the analyses would be representative of the Canadian population. Bootstrap weights were applied using SAS-Callable SUDAAN 11.0 to account for underestimation of standard errors due to the complex survey design.[35]

Results

In 2012, 2.6% of Canadians aged 15 or older (an estimated 721,700) met all three criteria for past 12-month GAD (Table 1). Almost as many (2.3% or 654,700) met two of the three diagnostic criteria. These two groups are referred to, respectively, as having threshold GAD or subthreshold GAD.

Most (61%) of those in the past 12-month subthreshold GAD group met the lifetime criterion and had experienced significant impairment in the past year. Another 12% met the lifetime criterion and had experienced symptoms for at least six months in the past year. The remaining 27% did not meet the lifetime criterion, but, in the past year, experienced symptoms for at least six months and reported significant impairment.

Table 1
Prevalence of threshold and subthreshold generalized anxiety disorder (GAD), past 12 months, by selected characteristics, household population aged 15 or older, Canada excluding territories, 2012

	Threshold GAD				Subthreshold GAD			
			95% confidence interval				95% confidence interval	
Characteristic	Number '000	%	from	to	Number '000	%	from	to
Total	721.7	2.6	2.3	2.9	654.7	2.3	2.0	2.7
Sex								
Men	270.5	2.0 **	1.6	2.4	177.2	1.3**	1.0	1.6
Women†	451.2	3.2	2.8	3.7	477.6	3.4	2.8	4.0
Age group								
15 to 24†	107.7	2.4	1.8	3.2	82.3E	1.9E	1.3	2.7
25 to 44	268.2	2.9	2.4	3.5	229.1	2.5	2.0	3.2
45 to 64	288.4	3.0	2.5	3.6	286.6	3.0*	2.4	3.7
65 or older	57.4E	1.2E **	0.9	1.7	56.7	1.2	0.9	1.6
Highest level of household education								
Postsecondary completion	498.5	2.5	2.2	2.8	443.3	2.2	1.9	2.5
Less than postsecondary completion†	169.5	3.0	2.4	3.7	137.8E	2.4E	1.7	3.4
Marital status								
Partner†	345.8	2.1	1.7	2.5	391.5	2.3	1.9	10.2
Widowed/Separated/Divorced	137.0	3.8**	3.0	4.8	80.3	2.2	1.8	11.2
Never married	235.2	3.1**	2.6	3.7	182.2	2.4	1.9	11.2
Place of residence								
Rural	122.0	2.5	1.9	3.2	131.1	2.7	2.0	3.6
Population centre†	599.7	2.6	2.3	2.9	523.6	2.3	1.9	2.6
Mood disorder								
Past 12 months	404.5	27.2 **	23.6	31.2	152.7	10.3**	8.0	13.1
Lifetime, not past 12 months	65.2E	3.3E **	2.3	4.7	134.5	6.8**	5.4	8.5
None†	246.7	1.0	0.9	1.2	361.3	1.5	1.2	1.8
Substance use disorder								
Past 12 months	95.8	8.0**	6.1	10.4	51.1E	4.3E*	2.6	6.8
Lifetime, not past 12 months	197.8	4.3**	3.5	5.2	159.6	3.4**	2.7	4.4
None†	406.0	1.9	1.6	2.2	437.7	2.0	1.7	2.4
Schizophrenia								
Yes	21.7E	F	F	F	11.0E	10.8E*	5.6	19.9
No†	700.0	2.5	2.2	2.8	638.5	2.3	2.0	2.6
Psychosis								
Yes	36.7E	13.6E **	9.2	19.5	59.2E	21.9E**	14.4	31.8
No†	680.7	2.5	2.2	2.8	595.0	2.1	1.9	2.5
PTSD								
Yes	113.0	24.3**	18.4	31.4	69.2E	14.9E**	9.8	21.9
No†	605.2	2.2	2.0	2.5	585.0	2.1	1.8	2.5

E use with caution
F too unreliable to be published
* significantly different from reference category ($p < 0.05$)
** significantly different from reference category ($p < 0.01$)
† reference category
Source: 2012 Canadian Community Health Survey–Mental Health.

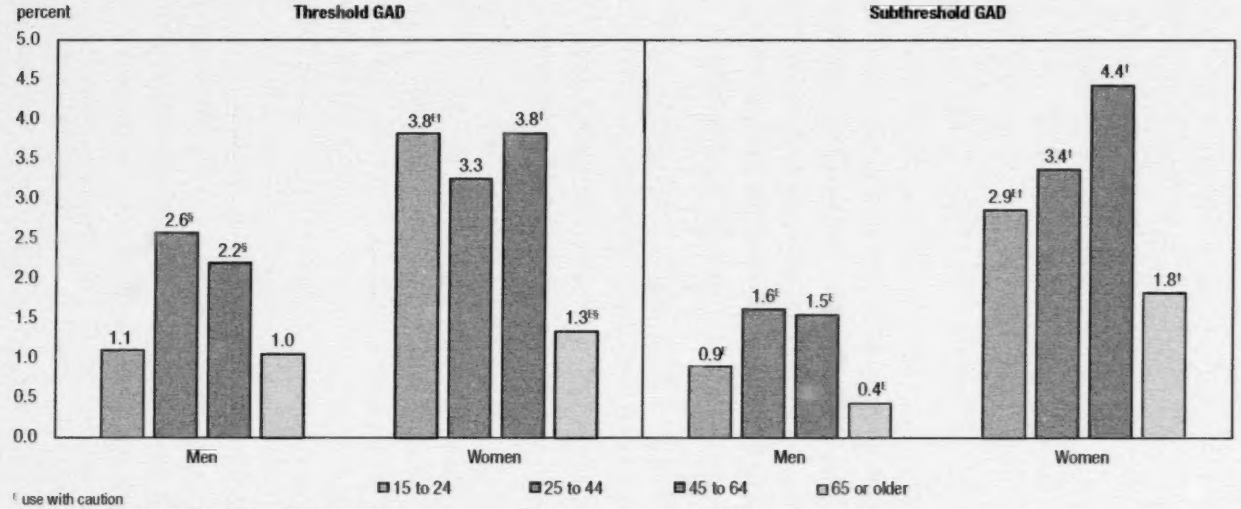
Women were more likely than men to have threshold or subthreshold GAD, overall (Table 1) and at most ages (Figure 1). In the threshold GAD group, prevalence among women was significantly lower at age 65 or older than at ages 15 to 24; among men, prevalence was higher in the middle age groups than at ages 15 to 24. In the subthreshold group, age patterns in prevalence were similar to those in the threshold group, but differences by age did not reach statistical significance.

People who were widowed/separated/divorced or who had never married were more likely than those with a partner to have threshold GAD (Table 1). The prevalence of subthreshold GAD did not differ by marital status. No significant differences in the prevalence of threshold or subthreshold GAD were apparent by household education or by place of residence.

People who met the criteria for a mood disorder or substance abuse or who reported a diagnosis of schizophrenia, psychosis or PTSD were significantly more likely than those without these psychiatric disorders to have threshold or subthreshold GAD (Table 1). Comorbidity with depression is of particular concern in the relationship between GAD and suicidality. In this study, 53% (95% CI: 47.2, 58.0) of those with past 12-month threshold GAD and 23% (95% CI: 17.6, 28.5) of those with past 12-month subthreshold GAD also met the criteria for past 12-month depression (not shown in tables).

Compared with people who did not have GAD, those with threshold or subthreshold GAD were significantly more likely to report suicide ideation (Figure 2). As well, for those with threshold GAD, suicide ideation was significantly more prevalent among men than women (32% versus 21%). In the subthreshold group, suicide ideation was slightly higher among men, but the difference from women did not reach statistical significance. Men with threshold GAD were also more likely than those with subthreshold GAD to report suicide ideation (32% versus 17%).

Figure 1
Prevalence of threshold and subthreshold Generalized Anxiety Disorder (GAD), by sex and age group, household population aged 15 or older, Canada excluding territories, 2012

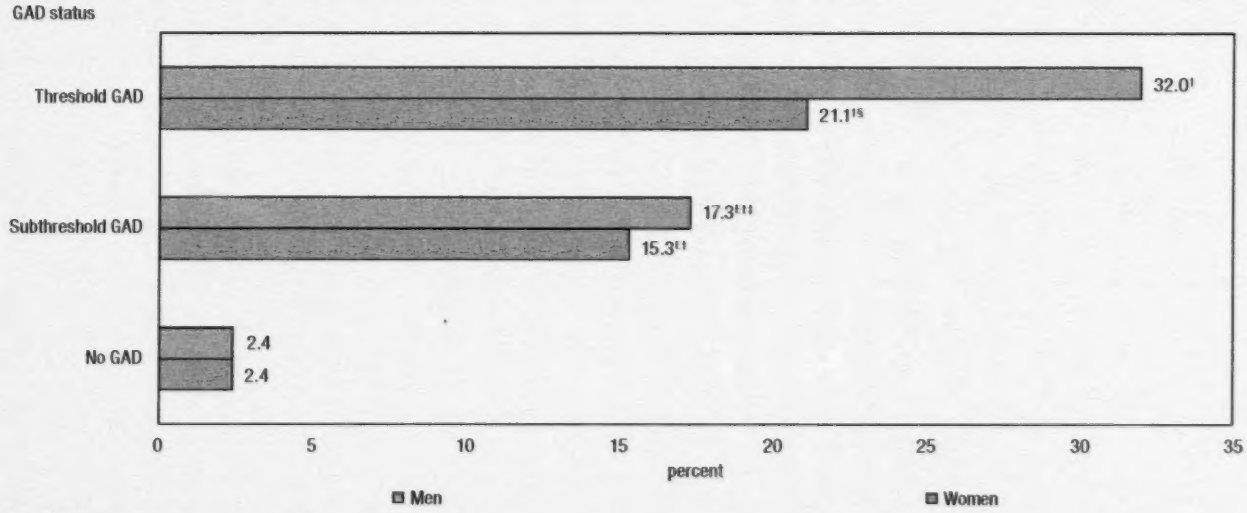


‡ use with caution
§ significantly different from 15-to-24 age group ($p < 0.05$)
† significantly different from men in same age group and GAD category ($p < 0.05$)
Source: Canadian Community Health Survey–Mental Health, 2012.

Even when sociodemographic factors were taken into account, the odds of past 12-month suicide ideation among people with threshold or subthreshold GAD were significantly higher than among those without GAD (Table 2, Model 1). Men with threshold GAD had 19 times the odds of suicidal thoughts while those with subthreshold GAD had 8 times the odds. For women, the corresponding odds were 12 times and 6 times higher.

When psychiatric comorbidity was included in the analysis (Table 2, Model 2), associations between GAD and suicide ideation were attenuated, but remained significant (odds ratios 5.1 and 1.9 for men and women with threshold

Figure 2
Suicide ideation, by Generalized Anxiety Disorder (GAD) status and sex, household population aged 15 or older, Canada excluding territories, 2012



‡ use with caution
§ significantly different from men ($p < 0.05$)
† significantly different from No GAD ($p < 0.05$)
‡ significantly different from threshold GAD ($p < 0.05$)
Source: Canadian Community Health Survey–Mental Health, 2012.

GAD, and 3.5 and 2.1 for men and women with subthreshold GAD).

Past 12-month mood or substance use disorders were significantly associated with suicide ideation among both sexes. Additionally, for men, being widowed, separated or divorced, lifetime mood disorder (but not past 12-month), and self-reported diagnosis of schizophrenia or psychosis were significantly associated with suicide ideation. Among women, younger age was associated with lower odds of suicide ideation; lifetime substance use disorder (but not past 12-month), and self-reported diagnosis of PTSD were associated with higher odds of suicide ideation.

Discussion

This is the first study to assess the prevalence of past 12-month threshold and subthreshold GAD in the Canadian population aged 15 or older. The prevalence estimates (2.6% for threshold GAD and 2.3% for subthreshold GAD) were consistent with other studies based on

Table 2
Adjusted odds ratios relating past 12-month suicide ideation to selected characteristics, household population aged 15 or older, Canada excluding territories, 2012

	Men						Women					
	Model 1			Model 2			Model 1			Model 2		
		95% confidence interval			95% confidence interval			95% confidence interval			95% confidence interval	
Characteristic	Odds ratio[†]	from	to	Odds ratio[§]	from	to	Odds ratio[‡]	from	to	Odds ratio[§]	from	to
Past 12-month Generalized Anxiety Disorder (GAD) status												
Threshold GAD	18.6**	11.7	29.5	5.1**	2.9	9.0	12.0**	7.8	18.5	1.9*	1.1	3.3
Subthreshold GAD	8.2**	4.4	15.4	3.5**	1.8	6.8	6.3**	3.6	10.9	2.1*	1.0	4.5
No GAD[†]	1.0	...	...	1.0	...	...	1.0	...	...	1.0	...	...
Age (continuous)	0.99*	0.98	1.00	0.99	0.98	1.00	0.97**	0.96	0.99	0.98**	0.97	0.99
Highest level of household education												
Postsecondary completion	0.8*	0.5	1.1	1.0	0.7	1.4	0.9**	0.6	1.4	1.1	0.8	1.6
Less than postsecondary[†]	1.0	...	...	1.0	...	...	1.0	...	...	1.0	...	...
Marital status												
Partner[†]	1.0	...	...	1.0	...	...	1.0	...	...	1.0	...	...
Widowed/Separated/Divorced	2.0**	1.3	3.1	1.7*	1.1	2.7	1.8	0.8	3.8	1.2	0.7	2.1
Never married	1.8**	1.2	2.7	1.5	1.0	2.4	1.4	0.9	2.2	1.3	0.9	2.0
Place of residence												
Rural	0.9	0.5	1.4	0.9	0.5	1.5	0.8	0.5	1.4	0.9	0.5	1.6
Population centre[†]	1.0	...	...	1.0	...	...	1.0	...	...	1.0	...	...
Mood disorder												
Lifetime, not past 12 months	...	...	...	3.5**	1.8	6.7	...	...	...	1.4	0.8	2.6
Past 12 months	...	...	...	7.9**	5.1	12.5	...	...	...	9.6**	6.3	14.7
None[†]	...	...	...	1.0	...	...	...	...	...	1.0	...	...
Substance use disorder												
Lifetime, not past 12 months	...	...	...	1.4	1.0	2.1	...	...	...	1.9**	1.3	2.8
Past 12 months	...	...	...	2.3**	1.4	3.8	...	...	...	3.2**	1.6	6.2
None[†]	...	...	...	1.0	...	...	...	...	...	1.0	...	...
Schizophrenia												
Yes	...	...	...	3.1*	1.0	9.7	...	...	...	0.7	0.1	5.4
No[†]	...	...	...	1.0	...	...	...	...	...	1.0	...	...
Psychosis												
Yes	...	...	...	3.4**	1.5	7.4	...	...	...	1.8	0.8	4.0
No[†]	...	...	...	1.0	...	...	...	...	...	1.0	...	...
PTSD												
Yes	...	...	...	1.5	0.6	3.8	...	...	...	5.7**	2.9	11.0
No[†]	...	...	...	1.0	...	...	...	...	...	1.0	...	...

... not applicable
* significantly different from reference category ($p < 0.05$)
** significantly different from reference category ($p < 0.01$)
[†] reference category
[‡] adjusted for GAD and sociodemographic variables
[§] adjusted for GAD, sociodemographic variables, and psychiatric comorbidity
Source: 2012 Canadian Community Health Survey–Mental Health.

DSM-IV criteria.[6-8,20] The prevalence of subthreshold GAD was at the lower end of the 2.1%-to-6.6% range identified by a 2014 review,[20] possibly because previous studies used different definitions of subthreshold GAD, examined different age groups,[6-8,13-15,17,36] or were based on primary care samples.[21]

Consistent with earlier studies, many sociodemographic and clinical characteristics of threshold and subthreshold GAD groups were similar.[6,8,14,15,17,20] Both disorders were more prevalent among women, younger or middle-aged people, those without a partner, and those with mood or substance use disorders, schizophrenia, psychosis, or PTSD.

Supporting several previous analyses,[23-26] this study found that threshold GAD was significantly associated with suicide ideation in both sexes, independent of sociodemographic characteristics and the presence of other mental disorders. Other studies, however, did not find such associations.[27,29,30] The disparate findings may be related to lifetime rather than past 12-month measures of suicide and GAD, restricted age groups, or the range of psychiatric disorders controlled (for example, not all studies could control for personality disorders).

While the burden of threshold GAD is well known,[2,3] subthreshold GAD, too, has been related to psychosocial distress, impairment, and health service use and is predictive of future threshold disorder.[20] Thus, identifying individuals with subthreshold GAD is useful in assessing the potential for negative outcomes and for the development of threshold GAD.

The present study found that those with subthreshold GAD had increased odds of past 12-month suicide ideation. These results are consistent with a 2006 analysis[12] that observed that threshold and subthreshold GAD did not differ in their association with suicide attempts in a young cohort.

Several potential explanations may underlie the relationship between GAD and suicidal behaviours.[31] First, direct effects of the distress and suffering caused by anxiety symptoms may trigger suicide ideation or attempts. Second, indirect mechanisms such as the development of other mental disorders may precipitate suicidal behaviours. Lastly, common factors such as genetics, physical illness, and social deprivation may predispose individuals to the development of both anxiety disorders and suicidal behaviours.

In this analysis, odds ratios measuring the association between threshold and subthreshold GAD and suicide ideation dropped substantially when controlling for other mental disorders. This lends support to the argument that disorders that are highly comorbid with GAD are responsible for a large part of the association. Even so, odds ratios continued to be statistically significant and substantial in the full multivariate analysis, suggesting that both threshold and subthreshold GAD are uniquely related to suicide ideation.

The relationship between GAD, mood disorders and suicidality is more complex than can be discerned from this study. For example, two studies[24,28] found that mood disorders had a stronger relationship to suicide ideation, plans and attempts than did anxiety disorders. However, GAD and other anxiety disorders played a greater role than mood disorders in the progression to suicide attempts among ideators. Further investigation of the role of psychological comorbidity is warranted.

In this study, suicide ideation was 1.5 times more prevalent among men than women with threshold GAD, but the association with suicide ideation persisted for both men and women in multivariate analysis. Most previous studies did not examine men and women separately; one of the few that did found a significant association between GAD and suicide ideation only among women.[25]

Other researchers[32,37] have evaluated the clinical utility of findings by assessing the magnitude of odds ratios in terms of the absolute risk of suicidal behaviours. In the population overall, the risk of having thoughts of suicide is low. For example, based on estimates from the 2012 CCHS-MH, 3.2% of men in the household population experienced suicide ideation in the past 12 months. When this is multiplied by odds ratios calculated in the present study (5.1 for men with threshold GAD, and 3.5 for men with subthreshold GAD), the resulting odds of suicide ideation are still quite low. The likelihood of past-12 month suicide ideation increases to 0.162 for men with threshold GAD and to 0.113 for men with subthreshold GAD, compared with 0.032 for men overall.

What is already known on this subject?

- Subthreshold Generalized Anxiety Disorder (GAD) has been reported to be at least as prevalent as threshold GAD, but national estimates have not been available for Canada.
- Results of previous studies of associations between GAD and suicidal behaviours have been contradictory.

What does this study add?

- In 2012, an estimated 722,000 Canadians aged 15 or older had past 12-month threshold GAD, and another 655,000 had subthreshold GAD.
- Even when sociodemographic factors and comorbid mental disorders were taken into account, GAD was significantly associated with suicide ideation in the previous year.
- The association between GAD and suicide ideation was apparent among men and women with threshold and with subthreshold level disorder.

Limitations

A number of limitations of the present study should be acknowledged. The data are cross-sectional and do not imply a causal relationship between GAD and suicide ideation.

Temporal order cannot be determined; it is possible that suicidal thoughts preceded GAD, although this is minimized

by examining past-12-month rather than lifetime GAD and suicide ideation. Nonetheless, longitudinal studies that seek to identify GAD as preceding and increasing the risk of suicide ideation are necessary to establish whether GAD is a risk factor for, rather than a correlate of, suicide ideation.

The survey instrument did not allow an exact replication of 12-month subthreshold definitions used in previous studies based on DSM-IV[8,17]; thus, direct comparisons of prevalence were not possible.

The CHMS–MH did not measure all psychiatric conditions, such as personality disorders, that have been shown to be related to suicide risk, but which could not be accounted for in multivariate analysis. As well, mental disorders were assessed with the WHO-CIDI survey instrument or by self-reported diagnosis and were not verified by any other means.

This study examined people who reported thoughts of suicide. The number who progressed to suicide plans or attempts was too small for analysis.

The study does not include suicide deaths, of which there were 3,926 (2,972 males, 954 females) in Canada in 2012.[38] These people were not represented in the survey, and their GAD status is unknown; thus, potential associations between GAD and completed suicide could not be assessed.

Conclusion

This study presents the first national estimates of past-12 month threshold and subthreshold GAD in Canada, and highlights associations between GAD and suicide ideation in both men and women. The results suggest that suicide risk assessment may be of value not only for individuals with threshold GAD, but also for those with subthreshold GAD. Understanding associations between individual mental disorders and suicidal behaviours may help inform efforts to reduce suicide rates. ■

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